

A golden retriever puppy is lying down on a white surface, looking directly at the camera. A blue water bottle is placed on its back, with the text 'PET SUPPLY RECOMMENDER' overlaid on it. The puppy's eyes are closed, and its front paws are visible in the foreground.

PET SUPPLY RECOMMENDER

MAI TRAN

METIS

7/12/2022

CLIENT

- Biggest online pet store
- Recommend personalized pet breed-specific supplies
- Enhance consumer engagement

The Chewy logo is displayed in a bold, blue, rounded, and playful sans-serif font. The letters are thick and have a friendly, approachable feel, with the 'y' having a small tail that curves upwards.



DATA

- The Oxford-IIIT Pet Dataset
- 37 cat and dog categories
- ~200 images for each category/breed
- 7433 total images

DESIGN PROCESS

EDA

Performance Metric
Selection - Accuracy

Baseline Model -
Custom CNN Model

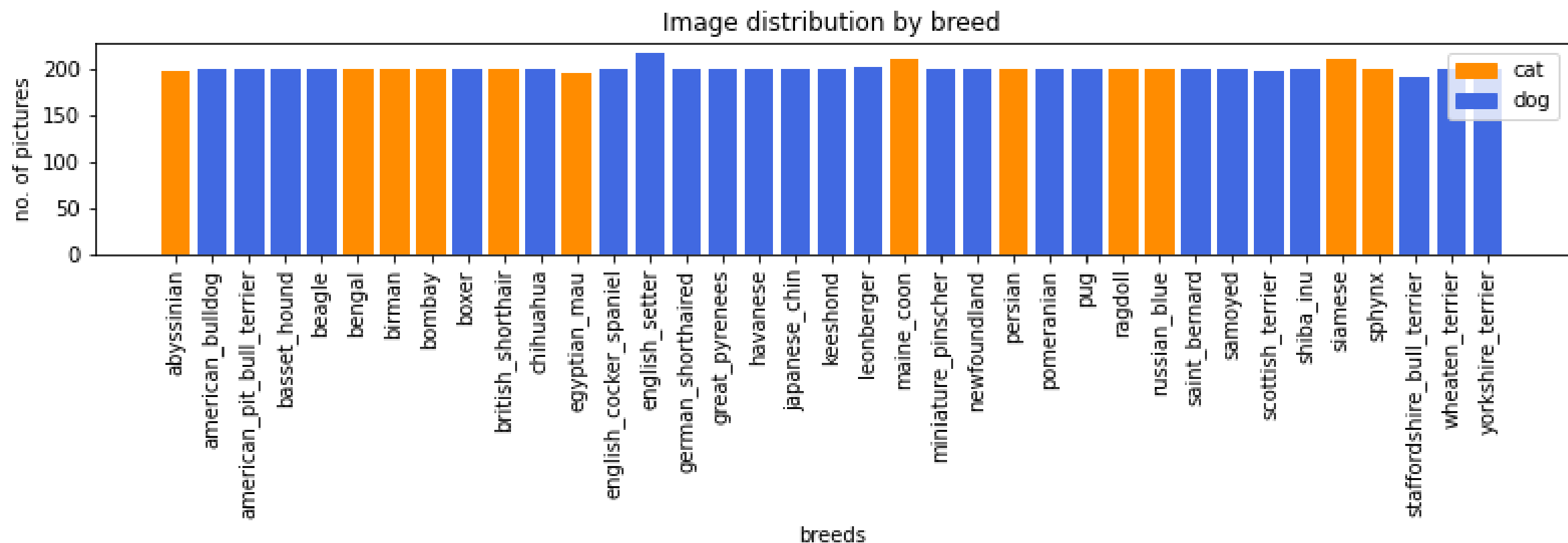
Comparison Model -
Logistic Regression
with VGG16 Transfer
Learning

Model Performance
Comparison



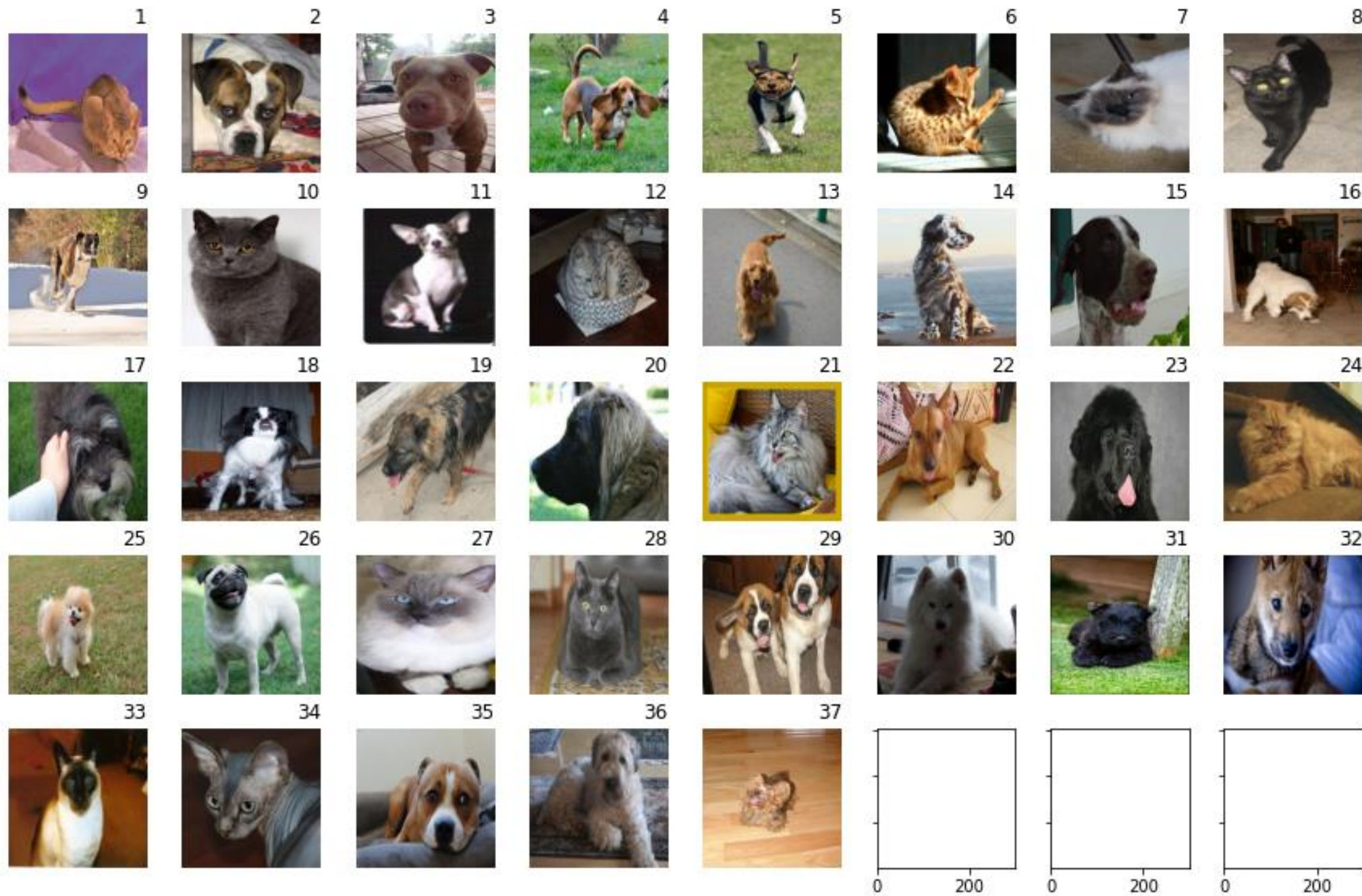
EDA FINDINGS

- 40% cat images vs 60% dog images
- 6 faulty images
- Each of 37 breeds has about ~200 training images



EDA RESULTS

Examples of Pet Image per Breed



CNN Model	Accuracy
1) Custom	0.035
2) Custom w/ Doubling Image Size & Neurons	0.054
3) Custom w/ Decreasing Batch Size, Adding Learning Rate, Changing Activation Functions	0.033
4) Logistic Regression w/ VGG16 Transfer Learning	0.86

CNN MODEL TUNING

FUTURE WORK

Add web-based
Streamlit
recommender

Train mobile CNN
for mobile platform
integration

THANK YOU!